

REMARKS

Claims 1 - 29 were submitted for examination. In this Office Action, Claims 1-3, 5-10, 12-13 and 16 are allowed, claims 4, 11, 14-15, and 17-22 are rejected under 35 USC 112, and claims 23-29 are rejected under 35 USC(a) as being unpatentable over Sander et al (US Pat. App. Pub. No.: 20040208157, hereinafter “Sander”) in view of Ahn et al (US Pat. App. Pub. No.: 20020080892, hereinafter “Ahn”) and further in view of Minoda et al (US Pat. No.: 5,661,425, hereinafter “Minoda”).

The Examiner is appreciated for the thoughtful examination and comments in the Office Action. In the foregoing amendments, the Applicant has amended Claims 4, 11, 23, 27 and 29 to correct the informalities raised by the Examiner. The Applicant submits that no new matters have been added. Accordingly, the Applicant believes that the rejections under 35 USC 112 have been overcome. Claims 1-22 shall be now in condition for allowance.

Patentability of Claim 23:

Claims 23-29 are still rejected. After additional limitations were added in the preliminary amendment filed concurrently with the RCE, the Examiner cites Sander, Ahn and Minoda in combination to show the teaching. Claim 23 has been amended to include some additional limitations as shown in paragraphs [0032] and [0036], also shown in FIG. 5. It is axiomatic that an invention in a patent application is defined by, and must be examined with respect to, the specific language of the claims. As amended, Claim 23 now recites:

compensating a frequency drift and other non-linear effects of a modulated voltage-controlled-oscillator (VCO) and a power amplifier by predistorting a baseband amplitude signal and a phase signal in accordance with one or more distorting parameters that are determined based on a sample of an output of the transmitter, wherein the baseband amplitude signal and the phase signal are expressed in terms of polar coordinates, and the sample is down-converted with an output from the VCO before being demodulated to facilitate a predistortion calibration in a predistortion calibration unit to update

the distorting parameters, and one output from the predistortion calibration unit used to adjust the phase signal;
providing a phase-locked loop (PLL) with an adaptive phase gain and a phase offset control in response to the phase signal;
modulating the power amplifier with the baseband amplitude signal and an output coupled from the modulated voltage controlled oscillator (VCO).

(*emphasis added*)

FIG. 5 of the instant application clearly shows that a sample of the output of the transmitter is taken and goes through a down-conversion unit 537 and a demodulation 535 to determine the predistortion calibration, one output from the predistortion calibration unit 533 is coupled to the phase offset unit 523 to essentially adjust the phase signal.

In contrast, Sander shows in FIG. 12 that no sample of the output is taken to control the “pre-distortion” of the signals. In other words, Sander fails to teach or suggest a feedback loop including the output of the transmitter. The Examiner combines Sander, Ahn and Minoda teach such. The Applicant respectfully contests the combination of Sander, Ahn and Minoda as it is believed that there is no motivation to combine these three references in the manner proposed by the Examiner. Nevertheless, even if these three references were to be combined, the combination would still fail to teach or suggest the combined features recited in the Claim 23.

Ahn shows in FIG. 2 that there is a feedback from the output. However, there a subtle difference between Ahn and Claim 23. First, Ahn uses I and Q signals, inphase and quadrature signal (see paragraph 0034 of Ahn), that are totally different in concept from “the baseband amplitude signal and the phase signal expressed in terms of polar coordinates” as recited in Claim 23. Thus the feedback signal from the output of the amplifier produces similar I and Q signals that can not be used for “adjusting the phase signal”. Another important difference is, as stated in Ahn paragraph [0036], the demodulation unit 150 takes in a local oscillating frequency from LO 105 (see FIG. 2 and paragraph [0036]). In contrast, Claim 23 is amended to recite “the sample is down-

converted with an output from the VCO". It is commonly understood that a local oscillating frequency and a signal from a VCO are different in operation.

Minoda discloses a PLL circuit and uses a feedback to alter the average frequency of the PLL clock signal by adjusting the width of the PLL clock signal (see Abstract). In contrast, Claim 23 recites the adjustment of the phase signal itself. It is understood in the art that the adjustment of the width of a PLL clock signal and adjustment of a phase signal are two different approaches in designs.

Given the differences in each of the cited references from Claim 23, the combination of Sander, Ahn and Minoda neither teach nor suggest the combined features recited in amended Claim 23. Accordingly, the Applicant respectfully submits Claim 23 shall be allowable over the cited references. Reconsideration of Claims 23-29 is respectfully requested.

In view of the above amendments and remarks, the Applicant believes that Claims 1 - 29 shall be in condition for allowance over the cited references. Early and favorable action is being respectfully solicited.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplementary Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at (408)777-8873.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to "Commissioner of Patents and Trademarks, Washington, DC 20231", on June 18, 2007.

e-filed

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Respectfully submitted;

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